IV. SUMMARY

State Water Policy mandates that water management districts plan for future water supplies. The South Florida Water Management District began to fulfill this mandate with the publication of the District's Water Supply Policy Document in December 1991. The Water Supply Policy Document interpreted state water planning policy for application within the District, and provided direction for three other key elements needed to meet the directives of state law: (1) regional water supply plans, and, where appropriate, more localized water supply plans; (2) water supply elements of Surface Water Improvement and Management plans (SWIM plans); and (3) revisions to the District's Basis of Review for Water Use Permitting.

The Lower West Coast (LWC) Water Supply Plan is a regional water supply plan that focuses on water supply demands and constraints in the LWC Planning Area. The principal constraints on water supply in the LWC Planning Area are environmental protection, seawater intrusion, and protection of the aquifers from other adverse impacts caused by excessive ground water drawdowns.

This plan provides long-range guidance for decisions affecting water supply in the LWC Planning Area. These decisions will involve the District, utilities, agriculture, environmental interests, land developers and local governments.

PLANNING PROCESS

The process developed for this plan included five major components: (1) development of goals, directives, and policies, (2) data collection and review, (3) analysis and modeling, (4) preparation of recommendations, and (5) public participation and comment.

Three principles influenced the plan's preparation and outcome:

- **The plan is regional and not site-specific.** The plan looks at demands and potential impacts in the region as a whole rather than distinguishing and addressing localized problem areas within the planning area. The plan does not make specific recommendations for individual permittees or localized problem areas, but rather provides regional recommendations.

- **The plan must be oriented towards the LWC Planning Area and its people.** The data and information are specific to the LWC Planning Area. Population, geologic, meteorologic, and demand information from the LWC Planning Area were used in this plan. The LWC Water Supply Plan Advisory Committee was comprised of 49 people from the LWC Planning Area representing environmental, agricultural, utility and local government interests. The committee influenced the direction and content of the plan.

- **The plan is dynamic and ongoing.** The plan is a "snapshot" representing the current understanding of what future water demands and resulting impacts might be between now and the year 2010. It must be recognized, however, that the planning process is iterative; the plan is scheduled to be reviewed and amended every five years. As our understanding of the resources and issues change, so will the plan.

IMPLEMENTATION OF RECOMMENDATIONS

This plan presents 32 recommendations in 4 categories: (1) develop new sources of water, (2) use water more efficiently, (3) modify strategies to protect water resources and the environment, and (4) perform additional studies of water resources and the environment. The recommendations are not self implementing; they will instead be implemented by actions of the District, local governments, water suppliers, and water users. Actions by the District include regulation; research and testing; operations and construction; and cooperative funding of water supply projects with local government and water suppliers. General time frames and the responsible parties involved in implementing each of the recommendations are listed below.

Develop New Sources of Water

Deeper Aquifers

(1) The District should budget for and complete its planned drilling and testing of the Floridan Aquifer System in the LWC Planning Area by October 1, 1996.

Responsible Party: SFWMD
Time Frame: 2-3 years

(2) The District should make preliminary results of the Floridan Aquifer testing available in a timely fashion to public and private water suppliers and local governments.

Responsible Party: SFWMD
Time Frame: 1-2 years

(3) The District should conduct exploration, mapping, and testing of the Sandstone aquifer.

Responsible Party: SFWMD
Time Frame: 3-4 years

(4) The District should prepare criteria for development of the Floridan Aquifer System using RO technology.

Responsible Party: SFWMD
Time Frame: 1 year

Aquifer Storage and Recovery

(5) The District should continue to work with public and private water suppliers and local governments in identifying additional sites for ASR projects. The District should continue to provide funding to support additional ASR facilities in the planning area.

Responsible Parties: Utilities & SFWMD
Time Frame: 4-5 years

(6) The District should actively work with the Florida Department of Environmental Protection (FDEP) regarding Florida Underground Injection Control (UIC) regulations to address the concepts of ASR in Florida laws.

Responsible Parties: FDEP & SFWMD
Time Frame: 2-3 years

(7) The District should determine areas within the region where canal flow into estuaries can be reduced and stored underground for eventual use.

Responsible Party: SFWMD
Time Frame: 3-5 years

(8) The District should prepare criteria for implementing ASR within the Floridan Aquifer System.

Responsible Party: SFWMD
Time Frame: 1 year

Reclaimed Water

(9) The District should initiate the rule development process for new water use rules that accelerate the use of reclaimed water in the LWC Planning Area.

Responsible Parties: Utilities & SFWMD
Time Frame: 20 years

Surface Water Resources

(10) The District should enter into a cooperative agreement with the Lee County Regional Water Supply Authority to explore the feasibility of using the Caloosahatchee River as a source of supply, perhaps in conjunction with ASR technology.

Responsible Party: SFWMD
Time Frame: 3-4 years

(11) The District should coordinate with the Lee County Department of Natural Resources to help assist adoption of the current Lee County Surface Water Management Master Plan by the Lee County Board of Commissioners. The District should also continue to cooperate with Lee County in identifying other potentially beneficial improvements and water management strategies for Lee County in the future.

Responsible Parties: Lee County & SFWMD
Time Frame: 1-2 years

(12) Lee County should adopt a dedicated funding source for the Lee County Storm Water Utility.

Responsible Party: Lee County
Time Frame: 1 year

Use Water More Efficiently

Urban and Agricultural Water Conservation

(13) The District should continue to require water conservation plans for public and private water suppliers, commercial and industrial water use, and irrigation of landscape and golf courses. These plans should at least contain the current (January 1993) mandatory water conservation elements.

Responsible Party: SFWMD
Time Frame: Ongoing

(14) The District should explore the rule development process for new water use rules that promote increasing irrigation efficiency for vegetable fields in the Lower West Coast region.

Responsible Parties: SFWMD
Time Frame: 1 year

Inefficient Water Use Practices

(15) The District should explore rulemaking and funding options to address mitigation of impacts by large urban and agricultural users caused by regional water level declines on inefficient domestic withdrawal facilities.

Responsible Party: SFWMD
Time Frame: 1 year

Drainage Management

(16) The District should explore the drainage management plans proposed by the Big Cypress Basin for the Golden Gate Estates South area in west central Collier County and conduct preliminary studies and conceptual design for water control structures in the Corkscrew canal system.

Responsible Parties: BCBB & SFWMD
Time Frame: 5 years

Coordination with Public and Private Water Suppliers and Local Governments

(17) The District should identify specific projects and develop cost-sharing partnerships with public and private utilities and local governments to implement this plan during fiscal years 1994-95 through 1997-98.

Responsible Parties: Utilities & SFWMD
Time Frame: 3 years

(18) The District should encourage urban water suppliers in Collier County to explore the possibility of forming a regional water supply authority.

Responsible Parties: Collier County, Collier County Utilities, City of Naples, and SFWMD
Time Frame: 1-2 years

Modify Planning and Regulatory Strategies to Protect Water Resources and the Environment

Outstanding Natural Systems

(19) The District should encourage the incorporation of the ONS lands concept into state, regional, and local planning efforts recognizing the distinctions between ONSe and ONSm as described in this plan.

Responsible Party: SFWMD
Time Frame: 1 year

(20) The ONS map should be used to target the District's research program on the impacts of consumptive uses on wetlands.

Responsible Party: SFWMD
Time Frame: 5 years

(21) The ONS map should be used to identify regional off-site mitigation areas.

Responsible Party: SFWMD
Time Frame: 1 year

Water Source Reservation

(22) The District should modify its rules for water use permits to provide for source reservation of the shallow aquifers for specific classes of water users in geographically specific areas where future competition among users occurs and when alternative management techniques are not appropriate.

Responsible Party: SFWMD
Time Frame: 1 year

(23) The District should begin more detailed evaluations to determine how, where, and when water source reservation can be implemented.

Responsible Party: SFWMD
Time Frame: 1 year

Mitigation Banking

(24) The District should develop specific criteria and rules to allow withdrawals of water to cause adverse environmental impacts if suitable off-site mitigation is provided.

Responsible Party: SFWMD
Time Frame: 1 year

(25) Off-site mitigation should generally be allowed only when avoidance and minimization of adverse impacts is not feasible.

Responsible Party: SFWMD
Time Frame: 2 years

Revisions to the District's Basis of Review for Water Use Permits

(26) The resource protection criteria used in this plan (wetland protection, seawater intrusion protection, and general aquifer protection criteria) should be translated into rule form so that the criteria can be incorporated in the District's Basis of Review for water use permits.

Responsible Party: SFWMD
Time Frame: 1 year

(27) The District should incorporate a uniform level of service for all water use classes into its Basis of Review for water use permits.

Responsible Party: SFWMD
Time Frame: 1 year

Perform Additional Studies of Water Resources and the Environment

Impacts to Natural Systems

(28) The District should initiate a comprehensive research and monitoring program designed to better understand the relationship between consumptive use withdrawals and impacts to natural systems. The ultimate goal of this program should be to develop geographically specific regulatory criteria for drawdowns under wetlands that are tailored to specific types of wetland communities.

Responsible Party: SFWMD
Time Frame: 10 years

(29) This research and monitoring program should include an investigation of whether impacts have already occurred as a result of consumptive uses in the LWC Planning Area. A review should be conducted to identify past permitted uses that seem to have had significant potential for wetland impacts. Remote sensing data, historical wetland survey information, and field data should be analyzed in an effort to evaluate whether impacts have actually occurred. Any impacts that are documented should be evaluated with respect to the amount of drawdown and the type of vegetative community.

Responsible Party: SFWMD
Time Frame: 10 years

(30) The program should include long-term vegetative and hydrologic monitoring in areas where there is potential for future impacts to natural systems. The District already requires monitoring as a condition of certain

consumptive use permits. It may be necessary to augment permit compliance data with additional monitoring data collected by the District. All monitoring data should be periodically compiled and evaluated for impacts caused by withdrawals.

Responsible Party: SFWMD
Time Frame 10 years

Economic Analyses

(31) Detailed economic analyses should be performed for specific water supply options that appear to be particularly effective. Cost-benefit relationships should be prepared to evaluate regional options such as reuse, exploitation of deeper aquifer systems, and major surface water management projects.

Responsible Party: SFWMD
Time Frame: 1-2 years

Water Shortage Triggers

(32) Staff should continue to develop the water shortage management scheme, and when it is complete, the SFWMD should enter into rulemaking to implement this protocol in the LWC Planning Area.

Responsible Party: SFWMD
Time Frame: 1 year